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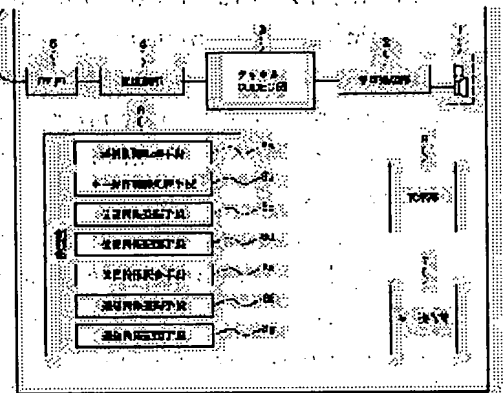
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## (54) RADIO COMMUNICATION SYSTEM AND ITS CONTROL METHOD

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To perform use even in an underground shopping area or the like; to perform miniaturization and to efficiently inform the position of a present terminal by transmitting identification information for identifying a radio base station.

**SOLUTION:** When the input of a position information name is ended and the registration key of a key operation part 7 is pressed, key input information is transmitted to a control part 8. The key operation control processing means 8b of the control part 8 analyzes the signals and instructs a position information registration means 8c to store the position information of a radio base station identification code sent from a present public radio base station in a position information storage means 8d. Then, the registration of informing information for allowing or denying the informing of the position information is set by pressing the informing key of the key operation part 7. The ON key of the key operation part 7 is pressed in the case of informing the position information, an OFF key is pressed in the case of denying it and position information informing is set. Then, the registration key of an operation key 7 is pressed and the registration is completed. The informing information is stored in an informing information storage means 8g.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] In the radio communications system which has a base transceiver station and a radio terminal said base transceiver station It has an identification information transmitting means to transmit the identification information for identifying a base transceiver station. Said radio terminal A receiving means to receive said identification information, and a registration means to make it correspond to said identification information, and to register positional information, A storage means to memorize the identification information corresponding to the positional information registered with said registration means, and said positional information, The radio communications system characterized by having a comparison means to compare the identification information which received with said receiving means with the identification information memorized for said storage means, and a notice means to notify having received the identification information memorized for said storage means according to the comparison of said comparison means.

[Claim 2] It is the radio communications system characterized by displaying the positional information which registered said notice means with said registration means in claim 1.

[Claim 3] It is the radio communications system characterized by said notice means outputting a sound in claim 1.

[Claim 4] The sound which said notice means outputs in claim 3 is a radio communications system characterized by being the pattern of the sound relevant to the identification information registered with said registration means.

[Claim 5] It is the radio communications system characterized by said notice means outputting voice in claim 1.

[Claim 6] It is the radio communications system characterized by said notice means vibrating said radio terminal in claim 1.

[Claim 7] It is the radio communications system characterized by the ability to also perform registration of whether to perform a notice according [ on claim 1 and / said registration means ] to said notice means.

[Claim 8] It is the radio communications system characterized by having a message means by which said radio terminal telephones to other radio terminals in claim 1.

[Claim 9] It is the radio communications system characterized by said radio terminal being a PHS (personal handy phone system) terminal in claim 1.

[Claim 10] A receiving means to receive the identification information which said base transceiver station transmitted in the radio communication equipment which communicates through a base transceiver station, A registration means to make it correspond to the identification information which received with said receiving means, and to register positional information, A storage means to memorize the identification information corresponding to the positional information registered with said registration means, and said positional information, The radio communication equipment characterized by having a comparison means to compare the identification information which received with said receiving means with the identification information memorized for said storage means, and a notice means to notify

having received the identification information memorized for said storage means according to the comparison of said comparison means.

[Claim 11] It is the radio communication equipment characterized by displaying the positional information which registered said notice means with said registration means in claim 10.

[Claim 12] It is the radio communications system characterized by said notice means outputting a sound in claim 10.

[Claim 13] The sound which said notice means outputs in claim 12 is a radio communication equipment characterized by being the pattern of the sound relevant to the identification information registered with said registration means.

[Claim 14] It is the radio communication equipment characterized by said notice means outputting voice in claim 10.

[Claim 15] It is the radio communication equipment characterized by said notice means vibrating said radio communication equipment in claim 10.

[Claim 16] It is the radio communication equipment characterized by the ability to also perform registration of whether to perform a notice according [ on claim 10 and / said registration means ] to said notice means.

[Claim 17] It is the radio communication equipment characterized by having a message means by which said radio communication equipment telephones to other radio communication equipments in claim 10.

[Claim 18] It is the radio communication equipment characterized by said radio communication equipment being a PHS (personal handy phone system) terminal in claim 10.

[Claim 19] In the control approach of a radio communications system of having a base transceiver station and a radio terminal said base transceiver station It has the identification information transmitting process of transmitting the identification information which identifies a base transceiver station. Said radio terminal The receiving process which receives said identification information, and the registration process which is made to correspond to the identification information which received at said receiving process, and registers positional information, The storage process which memorizes the identification information corresponding to the positional information registered at said registration process, and said positional information, The control approach of the radio communications system characterized by having the comparison process which compares the identification information which received at said receiving process with the identification information memorized at said storage process, and the notice process which notifies having received the identification information memorized at said storage process according to the comparison of said comparison process.

[Claim 20] It is the control approach of the radio communications system characterized by displaying the positional information which registered said notice process at said registration process in claim 19.

[Claim 21] It is the control approach of the radio communications system characterized by said notice process outputting a sound in claim 19.

[Claim 22] The sound outputted at said notice process in claim 21 is the control approach of the radio communications system characterized by being the pattern of the sound relevant to the identification information registered at said registration process.

[Claim 23] It is the control approach of the radio communications system characterized by said notice process outputting voice in claim 19.

[Claim 24] It is the control approach of the radio communications system characterized by said notice process vibrating said radio terminal in claim 19.

[Claim 25] It is the control approach of the radio communications system characterized by the ability to also perform registration of whether to perform a notice according [ on claim 19 and / said registration process ] to said notice process.

[Claim 26] It is the control approach of the radio communications system characterized by having the message section in which said radio terminal telephones to other radio terminals in claim 19.

[Claim 27] It is the control approach of the radio communications system characterized by said radio terminal being a PHS (personal handy phone system) terminal in claim 19.

[Claim 28] The receiving process which receives the identification information which said base transceiver station transmitted in the control approach of the radio communication equipment which communicates through a base transceiver station, The registration process which is made to correspond to the identification information which received at said receiving process, and registers positional information, The storage process which memorizes the identification information corresponding to the positional information registered at said registration process, and said positional information, The control approach of the radio communication equipment characterized by having the comparison process which compares the identification information which received at said receiving process with the identification information memorized at said storage process, and the notice process which notifies having received the identification information memorized at said storage process according to the comparison of said comparison process.

[Claim 29] It is the control approach of the radio communication equipment characterized by displaying the positional information which registered said notice process at said registration process in claim 28.

[Claim 30] It is the control approach of the radio communication equipment characterized by said notice process outputting a sound in claim 28.

[Claim 31] The sound outputted at said notice process in claim 30 is the control approach of the radio communication equipment characterized by being the pattern of the sound relevant to the identification information registered at said registration process.

[Claim 32] It is the control approach of the radio communication equipment characterized by said notice process outputting voice in claim 28.

[Claim 33] It is the control approach of the radio communication equipment characterized by said notice process vibrating said radio communication equipment in claim 28.

[Claim 34] It is the control approach of the radio communication equipment characterized by the ability to also perform registration of whether to perform a notice according [ on claim 28 and / said registration process ] to said notice process.

[Claim 35] It is the control approach of the radio communication equipment characterized by having the message section for said radio communication equipment telephoning to other radio communication equipments in claim 28.

[Claim 36] It is the control approach of the radio communication equipment characterized by said radio communication equipment being a PHS (personal handy phone system) terminal in claim 28.

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#### **DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the radio communications system which has a base/ transceiver station and a radio terminal, and its control approach.

[0002]

[Description of the Prior Art] Conventionally, LAT LONG is got to know from the receipt information of an electric wave sent from the communication satellite of space, and there is a car-navigation system used through GPS (global positioning system) which collates with the map data which the end of a local has, and displays the current position in the end of a local on a map.

[0003] Moreover, although it is not the device which notifies the location in the end of a local, in order to oversleep when an electric car etc. is taken, and to prevent, the timer device which notifies that an alarm sound and the time amount set as the pocket person of a device by vibration passed is after the set-up time amount.

[0004]

[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, since the car navigation using GPS received the LAT LONG which the satellite transmitted and pinpointed the location in the end of a local, since an electric wave did not arrive, the location in the end of a local was not able to be known by the migration in a subway etc.

[0005] Moreover, since it was the premise which is used carrying in an automobile, for using it as a personal digital assistant, the precision of the car-navigation system of positional information was coarse, and its magnitude of a device was also large-sized for it.

[0006] Moreover, since the time amount to the location whose one gets off correctly had to be computed and time amount had to be set up for oversleeping and using it for prevention, since a timer device generates an alarm in management of only time amount, it was difficult to generate an alarm, just before arriving at the location which gets off, and it was inconvenient.

[0007]

[Means for Solving the Problem] In the radio communications system which has a base transceiver station and a radio terminal in order that this invention may solve the above-mentioned technical problem said base transceiver station It has an identification information transmitting means to transmit the identification information for identifying a base transceiver station. Said radio terminal A receiving means to receive said identification information, and a registration means to make it correspond to the identification information which received with said receiving means, and to register positional information, A storage means to memorize the identification information corresponding to the positional information registered with said registration means, and said positional information, The radio communications system characterized by having a comparison means to compare the identification information which received with said receiving means with the identification information memorized for said storage means, and a notice means to notify having received the identification information memorized for said storage means according to the comparison of said comparison means is offered.

[0008] In the radio communication equipment which communicates through a base transceiver station moreover, said radio terminal A receiving means to receive the identification information which said base transceiver station transmitted, and a registration means to make it correspond to the identification information which received with said receiving means, and to register positional information, A storage means to memorize the identification information corresponding to the positional information registered with said registration means, and said positional information, The radio communication equipment characterized by having a comparison means to compare the identification information which received with said receiving means with the identification information memorized for said storage means, and a notice means to notify having received the identification information memorized for said storage means according to the comparison of said comparison means is offered.

[0009] In the control approach of a radio communications system of having a base transceiver station and a radio terminal moreover, said base transceiver station It has the identification information transmitting process of transmitting the identification information which identifies a base transceiver station. Said radio terminal The receiving process which receives said identification information, and the registration process which is made to correspond to the identification information which received at said receiving process, and registers positional information, The storage process which memorizes the identification information corresponding to the positional information registered at said registration process, and said positional information, The control approach of the radio communications system characterized by having the comparison process which compares the identification information which received at said receiving process with the identification information memorized at said storage process, and the notice process which notifies having received the identification information memorized at said storage process according to the comparison of said comparison process is offered.

[0010] In the control approach of the radio communication equipment which communicates through a base transceiver station moreover, said radio communication equipment The receiving process which receives the identification information which said base transceiver station transmitted, and the registration process which is made to correspond to the identification information which received at said receiving process, and registers positional information, The storage process which memorizes the identification information corresponding to the positional information registered at said registration process, and said positional information, The control approach of the radio communication equipment characterized by having the comparison process which compares the identification information which received at said receiving process with the identification information memorized at said storage process, and the notice process which notifies having received the identification information memorized at said storage process according to the comparison of said comparison process is offered.

[0011]

[Embodiment of the Invention]

(Gestalt of the 1st operation) Below, as a gestalt of operation of this invention, a personal handy phone system (PHS is called hereafter) is made into an example, and is explained.

[0012] Drawing 1 is the block diagram of the PHS telephone which is the radio terminal which is 1 operation gestalt of this invention.

[0013] In drawing 1, the headset in which 1 has a microphone, a loudspeaker, etc., and 2 Compression coding processing of voice data, The speech processing section which performs elongation decryption processing, and 3 TDMA (Time Division Multiple Access) processing of decomposition/assembly of a frame, The channel CODEC section which performs error correction processing, scramble processing, and unknown episode processing of voice data, The strange recovery section in which 4 performs the modulation of transmit data, and the recovery of received data, the RF section in which 5 transmits and receives, They are the antenna with which 6 transmits and receives an electric wave, the key stroke section in which 7 manages actuation of various key inputs, and the control section by which 8 controls each part. Communications control processing means 8a, It has key stroke control processing means 8b, positional information registration means 8c, and positional information collating means 8e, 8f of notice information registration means and 8g of notice information storage means, [ 8d of positional information storage means, and ]

[0014] Communications control processing means 8a performs communications protocol processing from the layer 1 of PHS to a layer 3, and key stroke control processing means 8b analyzes the various key input information from the key stroke section 7, and performs processing based on this analysis result.

[0015] Positional information registration means 8c will register the positional information corresponding to a base transceiver station identification code as shown in drawing 4 into 8d of positional information storage means, if the positional information (for example, "bottom Maruko station home" etc.)

corresponding to the base transceiver station identification code contained in the information signal which PHS telephone awaits and has sometimes been intermittently transmitted from a base transceiver station now is inputted through the key stroke section 7.

[0016] Here, the information signal (PCH) intermittently transmitted from this base transceiver station is explained.

[0017] Drawing 2 is drawing showing the frame format of the information signal (PCH) which the base transceiver station of PHS transmits intermittently.

[0018] An information signal (PCH) consists of a CI which shows unique WORD UW for taking Preamble PR and frame synchronization for taking the start symbol SS which shows the start of the lamp bit R and a frame, and a bit synchronization, and the classification of a frame, identification code CS-ID of a base transceiver station, and a control signal I, as shown in drawing.

[0019] When the part of a control signal I has arrival of the mail to itself, the telephone number (PS number) of a destination-side radio terminal enters.

[0020] Therefore, it is judged that the monitor of whether it awaits and he has arrival of the mail at the time and no had arrival of the mail to itself when the part of this control signal I was investigated and its telephone number (PS number) had been sent.

[0021] Drawing 3 is drawing showing the configuration of identification code CS-ID of a base transceiver station. Base transceiver station identification code CS-ID consists of 42 bits, and consists of addition ID for the outdoor public with the entrepreneur identification code which identifies the entrepreneur who is undertaking the communication link enterprise of PHS and which in other words shows whether it is an information signal from the base transceiver station of an entrepreneur of what.

[0022] The addition ID for the outdoor public consists of 33 bits, and consists of a general calling area number (n bits) which makes a group two or more base transceiver stations, and shows this area that carried out grouping, and addition ID (33-n bits).

[0023] In case a picture input device carries out location registration of a general calling area number and the number of bits of Addition ID to a base transceiver station, they acquire information from the information signal (BCCH) of the beginning from a base transceiver station.

[0024] Here, it is necessary to memorize [ identification code / of a base transceiver station ] an identification code about no bits in drawing 4. That is, since an entrepreneur identification code (9 bits) shows the entrepreneur of PHS with which the picture input device has joined, it memorizes the addition ID for the outdoor public.

[0025] In addition, in drawing 4, the case where a simultaneous paging area number is 16 bits, and Addition ID is 17 bits is made into the example.

[0026] Furthermore, each of Addition ID (17 bits) is remembered to be a simultaneous paging area number (16 bits) in the form of a hexadecimal (hexa format).

[0027] Positional information collating means 8e collates the base transceiver station identification code and the base transceiver station identification code of 8d of positional information storage means which are contained in the information signal which PHS telephone awaits and has sometimes been transmitted from a base transceiver station, determines the current position of PHS telephone, and performs learning of a location.

[0028] The information on whether 8f of notice information registration means notifies positional information through the key stroke section 7 corresponding to the base transceiver station identification code registered by said positional information registration means 8c and no is registered into the field of good/\*\* of the notice which is 8g of notice information storage means as shown in drawing 4.

[0029] 9 is a display which displays various information.

[0030] Drawing 5 is a PHS radio system chart for explaining this operation gestalt. In drawing 5, the wireless zone B where the public base transceiver station 503 (CS2) takes charge of the communication line by which a public network, and 502, 503 and 504 connect a public base transceiver station, and, as

for 505, 506, and 507, 501 connects each public base transceiver station (CS1, CS2, CS3) with a public network 501, the wireless zone A where the public base transceiver station 502 (CS1) takes charge of 508, and 509, and 510 are the wireless zones C which the public base transceiver station 503 (CS3) takes charge of.

[0031] Drawing 6 – drawing 8 are the flow charts explaining actuation of the gestalt of this operation.

[0032] Next, actuation of the gestalt of this operation is explained based on drawing 6 – drawing 8.

[0033] Registration actuation of the notice information on whether registration of positional information and positional information are notified first and no is explained.

[0034] In drawing 6, PHS telephone is in the wireless zone of a public base transceiver station (CS1–CS3), and carries out an initiation setup of push and positional information registration for the positional information key (not shown) which has received the information signal (PCH) from a base transceiver station and which awaits and sometimes exists at the key stroke section 7 of a radio terminal (ST1).

[0035] And a positional information name is inputted by the alphabet key (not shown) and conversion key (not shown) of the key stroke section 7 (ST2).

[0036] Here, when the location of a radio terminal is in the wireless zone A in drawing 5, suppose that a “bottom Maruko station home” and a positional information name are inputted.

[0037] If it finishes inputting a positional information name, the registration key (not shown) of the key stroke section 7 will be pushed, and completion actuation of positional information registration will be performed (ST3).

[0038] The key stroke section 7 sends such key input information to a control section 8. Key stroke control processing means 8b of a control section 8 analyzes such information (ST4), and it directs to memorize a “bottom Maruko station home” for 8d of positional information storage means as positional information of the base transceiver station identification code sent to positional information registration means 8c from a current public base transceiver station (ST5).

[0039] And a base transceiver station identification code and positional information are associated and memorized for 8d of positional information storage means (ST6).

[0040] Furthermore, although it becomes registration of the notice information on whether positional information is notified and no, when registering notice information, the notice key (not shown) of the key stroke section 7 is pressed, and an initiation setup of registration of the notice information on whether positional information is notified and no is carried out (ST7).

[0041] And although a notice setup of positional information is carried out, when notifying positional information and not notifying push and positional information for the on-key (not shown) of the key stroke section 7, the off-key (not shown) of the key stroke section 7 is pressed, setting actuation of the notice of positional information is performed (ST8), the registration key of the key stroke section 7 is pushed, and completion actuation of registration is performed (ST9).

[0042] The key stroke section 7 sends such key input information to a control section 8. Key stroke control processing means 8b of a control section 8 analyzes such information (ST10), and it directs to memorize notice information for 8f of notice information registration means at 8g of notice information storage means (ST11).

[0043] And this notice information is memorized by 8g of notice information storage means (ST12).

[0044] In addition, when register operation of this notice information is not performed, it shall be a setup which does not notify positional information as a default setup.

[0045] Next, updating actuation of the notice information memorized using drawing 7 is explained.

[0046] the updating key (not shown) of the key stroke section 7 — push — a notice key (not shown) is pressed further and an updating initiation setup of notice information is carried out (ST20).

[0047] good/\*\* of the notice corresponding to the positional information name and this which are memorized by 8d of positional information storage means, and 8g of notice information storage means at the display 9 — every one — or it indicates more than one every (ST21).



[0048] (ST22), the following positional information name, and good/\*\* of the notice corresponding to this are displayed by pressing the NEXT key (not shown) of the key stroke section 7.

[0049] And if a positional information name to update is displayed, the on-key (not shown) or the off-key (not shown) of the key stroke section 7 is pressed, updating setting actuation of the notice of positional information is performed (ST23), a registration key will be pushed and completion actuation of updating will be performed (ST24).

[0050] The key stroke section 7 sends such key input information to a control section 8. Key stroke control processing means 8b of a control section 8 analyzes such information (ST25), and directs renewal of the contents which 8g of notice information storage means has memorized for 8f of notice information registration means (ST26).

[0051] And the contents memorized by 8g of notice information storage means are updated (ST28).

[0052] Next, the actuation which notifies positional information is explained using drawing 8.

[0053] Here, the contents shown in drawing 4 shall be memorized by 8d of positional information storage means and 8g of notice information storage means of PHS telephone. Moreover, it sets to drawing 5 and is the wireless zone A. Let [ the location of 108 ] the location of the Shibuya station home and the wireless zone C be the Shinjuku station home for the location of a bottom Maruko station home and the wireless zone B.

[0054] Here, the user of PHS telephone takes an electric car and it is the wireless zone A. From 508 (bottom Maruko station home) to the wireless zone B The case where it moves to 509 (Shibuya station home) and the wireless zone C 510 (Shinjuku station home) is made into an example, and it explains.

[0055] When PHS telephone is in the wireless zone A, it is the public base transceiver station 1. The base transceiver station identification code of 502 is memorized inside. And a wireless zone replaces and it is the wireless zone B. To 509, a location awaits and it is sometimes the public base transceiver station 2. If the base station identification code of 503 is sent (ST30), a control section 8 will investigate whether the base station identification information which received is memorized by 8d of positional information storage means (ST31).

[0056] If 8d of positional information storage means does not memorize, it returns to ST30, and if it memorizes, the contents of 8g of the notice information storage means will be investigated (ST32). Here, since the positional information of the public base transceiver station 2 is contents which are not notified (ST33), henceforth, usual awaits it and it will be in a condition.

[0057] Next, reception of other base transceiver station identification codes investigates whether the base transceiver station identification code which received is memorized by 8d of positional information storage means (ST31). (ST30) If it does not memorize, it returns to ST30, and if it memorizes, it will progress to ST32.

[0058] In the case of the gestalt of this operation, it is the wireless zone C. To 510, a location awaits and it is sometimes the public base transceiver station 3. If the base station identification code of 504 is sent, a control section 8 will investigate the contents of 8g of the notice information storage means (ST32). Since it is the contents which notify the positional information of the public base transceiver station 3 here (ST33), the contents of 8d of the positional information storage means are collated by positional information collating means 8e (ST34), and it is the public base transceiver station 3. The information of the "Shinjuku station home" which is the positional information corresponding to the base transceiver station identification code ("1111 1000") of 504 is acquired (ST35). And the positional information of the "Shinjuku station home" is displayed on a display 9 (ST36).

[0059] And it awaits and returns to a condition.

[0060] (Gestalt of the 2nd operation) The block diagram of the PHS telephone which is the radio terminal of the gestalt of the 2nd operation is shown in drawing 9.

[0061] Drawing 9 forms the pronunciation section 10 which generates the sound of two or more patterns to the PHS telephone of drawing 1.

[0062] Since other configurations are the same as that of drawing 1 , explanation is omitted.

[0063] The gestalt of this operation is notified to the sound in which the pronunciation means 10 generates the notice of positional information, and notifies a location by changing the pattern of a sound according to the contents of positional information.

[0064] With the gestalt of this operation, in case setting actuation of notice information is performed by ST9 of drawing 6 , as shown in drawing 10 , a sound pattern is set up. A sound pattern has those with two or more kinds, the 1st pattern corresponding to a number 1, the 2nd pattern corresponding to a number 2, etc. corresponding to a number as shown in drawing 10 , and it is made not to generate a sound when it is a number 0.

[0065] Since other register operation is the same as that of the gestalt of the 1st operation, explanation is omitted.

[0066] The flow chart which shows actuation of the PHS telephone in the gestalt of this operation to drawing 11 is shown.

[0067] In drawing 11 , if the user of PHS telephone takes an electric car and receives a base transceiver station identification code by ST1101, as for a control section 8, the base transceiver station identification code which received will investigate whether 8d of positional information storage means memorizes (ST1102).

[0068] If 8d of positional information storage does not memorize, it returns to ST1101, and if it memorizes, the contents of 8g of the notice information storage means will be investigated (ST1103).

[0069] When a base transceiver station 2 transmits [ the base transceiver station identification code which received ], since the positional information of a base transceiver station 2 is contents which are not notified (ST1104), henceforth, usual awaits it and it will be in a condition.

[0070] Moreover, since this base transceiver station identification information is a setup which notifies positional information when a base transceiver station 3 transmits [ the base transceiver station identification code which received ] (ST1104), next the contents of the sound pattern are collated (ST1105), and a sound pattern is gained (ST1106).

[0071] Moreover, the contents of 8d of the positional information storage means are collated by positional information collating means 8e (ST1107), and the positional information corresponding to a base transceiver station identification code is acquired (ST1108). Here, since the base transceiver station identification code ("1111.1000") from a base transceiver station 3 is received, the information of the sound pattern number 2 and the Shinjuku station home is acquired.

[0072] And a control section 8 displays the positional information of the "Shinjuku station home" on a display 9 while generating the sound corresponding to the sound pattern number 2 in the pronunciation section 10 (ST1109).

[0073] Like the gestalt of this operation, the user of a radio terminal can know positional information more exactly by notifying by notice to a sound with presenting of positional information.

[0074] Moreover, with the gestalt of this operation, when the notice of a display of positional information was not performed, it was made to perform the notice by the sound, but it may be made to perform the notice by the sound without displaying positional information.

[0075] (Gestalt of the 3rd operation) The block diagram of the PHS telephone which is the radio terminal of the gestalt of the 3rd operation is shown in drawing 12 .

[0076] The speech synthesis section 11 is formed in the PHS telephone which shows drawing 12 to drawing 1 . Since other configurations are the same as that of drawing 1 , explanation is omitted.

[0077] With the gestalt of this operation, the positional information registered in registration actuation of the positional information of the gestalt of the 1st operation is analyzed by the control section 8, and it is made to carry out the voice output of the positional information in the speech synthesis section 11 with the notice of a display of positional information.

[0078] the gestalt of this operation — if — in case setting actuation of notice information is performed

by ST9 of drawing 6 , a voice output is set up as shown in drawing 13 . . . . .  
[0079] In drawing 13 , when it requires a voice output as it is un-\*\*\*\*, only a display output is performed, and when the voice output is good, it is made to perform a voice output with a display output.  
[0080] The flow chart which shows actuation of the PHS telephone in the gestalt of this operation to drawing 14 is shown.

[0081] In drawing 14 , if a base transceiver station identification code is received by ST1401, as for a control section 8, the base transceiver station identification code which received will investigate whether 8d of positional information storage means memorizes (ST1402).

[0082] If 8d of positional information storage does not memorize, it returns to ST1401, and if it memorizes, the contents of 8g of the notice information storage means will be investigated (ST1403).

[0083] When a base transceiver station 2 transmits [ the base transceiver station identification code which received ], since the positional information of a base transceiver station 2 is contents which are not notified (ST1404), henceforth, usual awaits it and it will be in a condition.

[0084] Moreover, since this base transceiver station identification information is a setup which notifies positional information when a base transceiver station 3 transmits [ the base transceiver station identification code which received ] (ST1404), it investigates whether it is a setup which carries out a voice output, or it is a setup which does not carry out a voice output (ST1405).

[0085] If it is a setup which carries out a voice output by ST1405, the contents of 8d of the positional information storage means will be collated by positional information collating means 8e (ST1406), and the positional information corresponding to a base transceiver station identification code will be acquired (ST1407). Since the base transceiver station identification code ("1111 1000") from a base transceiver station 3 is received with the gestalt of this operation, the information of the Shinjuku station home is acquired.

[0086] And while outputting the voice output according to positional information in the speech synthesis section 11, the positional information of the "Shinjuku station home" is displayed on a display 9 (ST1408).

[0087] Moreover, if it is a setup which does not perform a voice output by ST1405, the contents of 8d of the positional information storage means will be collated by positional information collating means 8e (ST1409), the positional information corresponding to a base transceiver station identification code will be acquired (ST1410), and the positional information of the "Shinjuku station home" will be displayed on a display 9 (ST1411).

[0088] By doing in this way, even if it does not see presenting of positional information, positional information can be known with voice.

[0089] (Gestalt of the 4th operation) The block diagram of the PHS telephone which is the radio terminal of the gestalt of the 4th operation is shown in drawing 15 .

[0090] Drawing 15 forms the case oscillating section 12 which vibrates the body of PHS telephone to the PHS telephone of drawing 1 .

[0091] Since other configurations are the same as that of drawing 1 , explanation is omitted.

[0092] The gestalt of this operation notifies the notice of positional information by vibrating the body of PHS telephone in the case oscillating section 12.

[0093] the gestalt of this operation — if — in case setting actuation of notice information is performed by ST9 of drawing 6 , as shown in drawing 16 , \*\*\*\* of vibration of the body of PHS telephone is set up.

[0094] When \*\*\*\* of vibration is that it is un-\*\*\*\*, only a display output is performed, and when \*\*\*\* of vibration is good, the body of PHS telephone is made to vibrate with a display output in drawing 16 .

[0095] The flow chart which shows actuation of the PHS telephone in the gestalt of this operation to drawing 17 is shown.

[0096] In drawing 17 , if a base transceiver station identification code is received by ST1701, as for a control section 8, the base transceiver station identification code which received will investigate

whether 8d of positional information storage means memorizes (ST1702).

[0097] If 8d of positional information storage does not memorize, it returns to ST1701, and if it memorizes, the contents of 8g of the notice information storage means will be investigated (ST1703).

[0098] When a base transceiver station 2 transmits [ the base transceiver station identification code which received ], since the positional information of a base transceiver station 2 is contents which are not notified (ST1704), henceforth, usual awaits it and it will be in a condition.

[0099] Moreover, since this base transceiver station identification information is a setup which notifies positional information when a base transceiver station 3 transmits [ the base transceiver station identification code which received ] (ST1704), it investigates whether it is a setup which carries out vibration of the body of PHS, or it is a setup which does not carry out vibration of the body of PHS (ST1705).

[0100] If it is a setup which carries out vibration of the body of PHS by ST1705, the contents of 8d of the positional information storage means will be collated by positional information collating means 8e (ST1706), and the positional information corresponding to a base transceiver station identification code will be acquired (ST1707). Since the base transceiver station identification code ("1111-1000") from a base transceiver station 3 is received with the gestalt of this operation, the information of the "Shinjuku station home" is acquired.

[0101] And while vibrating the body of PHS telephone, the positional information of the "Shinjuku station home" is displayed on a display 9 (ST1708).

[0102] Moreover, if it is a setup which does not vibrate the body of PHS by ST1705, the contents of 8d of the positional information storage means will be collated by positional information collating means 8e (ST1709), the positional information corresponding to a base transceiver station identification code will be acquired (ST1710), and the positional information of the "Shinjuku station home" will be displayed on a display 9 (ST1711).

[0103] By doing in this way, even if it does not see presenting of positional information, when the body of PHS makes it vibrate, it can notify that the location of PHS telephone turned into a location memorized by the positional information storage means.

[0104] In addition, although explanation in case PHS telephone is in public mode was given with the gestalt of the 4th operation from the gestalt of the 1st operation, also while operating in self-management mode, the bit pattern of a base transceiver station identification code only changes, and the same actuation as the gestalt of the 4th operation can be carried out from the gestalt of the 1st operation.

[0105] Moreover, although the gestalt of the 4th operation explained using PHS from the gestalt of the 1st operation, even if it carries out this invention by the system of other radio terminals or other wireless media, it can acquire the same effectiveness.

[0106]

[Effect of the Invention] As explained above, according to this invention, a radio terminal can know the location of a radio terminal using the information signal received from a base transceiver station.

[0107] Moreover, when the radio communications system for using a radio terminal is a microcell method like PHS, positional information can be known finely and a device can also be miniaturized.

[0108] Furthermore, there is outstanding effectiveness that it can prevent by oversleeping in exact actuation, by oversleeping and applying this radio terminal to the device for prevention.

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[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. \*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

**[Drawing 1]** The block diagram of the radio terminal of the gestalt of operation of the 1st of this invention.

**[Drawing 2]** The frame format of the information signal which the base transceiver station of the gestalt of operation of the 1st of this invention transmits

**[Drawing 3]** The frame format of the identification code of the base transceiver station of the gestalt of operation of the 1st of this invention.

**[Drawing 4]** Drawing showing the example of storage of the positional information of the gestalt of operation of the 1st of this invention.

**[Drawing 5]** The system configuration Fig. of the gestalt of operation of the 1st of this invention.

**[Drawing 6]** The flow chart which shows registration actuation of the positional information of the gestalt of operation of the 1st of this invention, and notice information.

**[Drawing 7]** The flow chart which shows updating actuation of the notice information on the gestalt of operation of the 1st of this invention.

**[Drawing 8]** The flow chart which shows the positional information notification action of the radio terminal of the gestalt of operation of the 1st of this invention.

**[Drawing 9]** The block diagram of the radio terminal of the gestalt of operation of the 2nd of this invention.

**[Drawing 10]** Drawing showing the example of storage of the positional information of the gestalt of operation of the 2nd of this invention.

**[Drawing 11]** The flow chart which shows the positional information notification action of the radio terminal of the gestalt of operation of the 2nd of this invention.

**[Drawing 12]** The block diagram of the radio terminal of the gestalt of operation of the 3rd of this invention.

**[Drawing 13]** Drawing showing the example of storage of the positional information of the gestalt of operation of the 3rd of this invention.

**[Drawing 14]** The flow chart which shows the positional information notification action of the radio terminal of the gestalt of operation of the 3rd of this invention.

**[Drawing 15]** The block diagram of the radio terminal of the gestalt of operation of the 4th of this invention.

**[Drawing 16]** Drawing showing the example of storage of the positional information of the gestalt of operation of the 4th of this invention.

**[Drawing 17]** The flow chart which shows the positional information notification action of the radio terminal of the gestalt of operation of the 4th of this invention.

**[Description of Notations]**

1 Transmission and Reception Talk Machine

2 Speech Processing Section

3 The Channel CODEC Section

4 Strange Recovery Section

5 The RF Section

6 Antenna

7 Key Stroke Section

8 Control Section

8a Communications control processing means

8b Key stroke control processing means

8c Positional information registration means

8d Positional information storage means

8e Positional information collating means

8f Notice information registration means

8g Notice information storage means

10 [Translation done.]

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